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Editor, EDGAR W. WOOLARD

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METEOROLOGICAL AND CLIMATOLOGICAL DATA FOR FEBRUARY 1943

[Climate and Crop Weather Division, J. B. KINCER, in charge]

AEROLOGICAL OBSERVATIONS

NOTICE.—Effective with the December 1942 issue, the publication of table 1 (RAOB summaries) was discontinued indefinitely.—EDITOR.

TABLE 2.—*Free-air resultant winds based on pilot-balloon observations made near 5 p. m. (75th meridian time) during February 1943. Directions given in degrees from north (N=360°, E=90°, S=180°, W=270°). Velocities in meters per second*

Altitude (meters) m. s. l.	Abilene, Tex. (538 m.)			Albuquerque, N.Mex. (1,630 m.)			Atlanta, Ga. (299 m.)			Billings, Mont. (1,095 m.)			Bismarck, N. Dak. (512 m.)			Boise, Idaho (870 m.)			Brownsville, Tex. (7 m.)			Buffalo, N. Y. (220 m.)			Burlington, Vt. (132 m.)			Charleston, S. C. (17 m.)			Cincinnati, Ohio (152 m.)			Denver, Colo. (1,627 m.)			El Paso, Tex. (1,196 m.)		
	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity
Surface	28	277	2.5	28	275	2.7	28	293	4.0	26	258	4.3	26	311	4.3	26	251	0.5	28	126	3.3	23	254	6.0	26	216	1.7	28	249	2.2	27	252	3.2	27	320	2.6	28	260	2.4
500							28	273	4.8										28	148	4.4	23	251	9.1	26	232	4.1	28	247	4.7	27	253	5.0						
1,000	28	259	3.2				27	271	6.1				24	306	8.9	26	236	0.4	24	202	2.6	16	251	13.1	25	253	7.7	28	266	7.2	23	258	7.6						
1,500	27	268	4.6				27	276	7.6	26	269	8.9	22	308	11.0	26	209	1.3	23	282	2.7	11	261	14.1	17	263	9.8	26	279	7.9	21	268	10.4				28	259	2.3
2,000	27	277	7.2	28	270	3.0	23	281	11.7	24	283	11.1	17	304	11.9	26	218	2.3	20	276	3.9							24	281	11.7	17	282	13.4	27	307	3.9	28	253	2.3
2,500	27	276	10.1	28	275	3.7	20	286	13.4	23	291	13.0	14	304	14.2	26	256	4.2	18	264	4.2							22	281	15.0	14	282	14.6	25	300	4.8	28	273	4.4
3,000	25	277	12.4	28	281	6.4	17	290	14.3	21	297	13.0	14	305	16.4	24	261	5.3	17	274	5.8							22	281	15.6	11	276	14.8	24	294	6.6	28	274	8.2
4,000	24	276	16.2	27	285	11.1	16	286	16.6	18	295	14.2	12	314	17.5	20	291	6.1	17	282	7.0							18	281	21.8				24	303	10.1	26	277	12.6
5,000	20	279	16.6	26	290	12.4	13	293	21.1	15	288	16.0	11	314	18.4	19	290	7.1	16	278	12.2							16	281	25.2				24	303	13.9	24	279	12.2
6,000	19	277	18.7	26	283	15.0	12	287	22.4	13	296	18.6	10	326	22.2	16	306	5.5	15	279	15.9							11	284	26.1				21	299	14.0	22	286	14.5
8,000	15	287	20.7	20	292	16.6										13	320	2.5	14	266	21.0													17	291	14.8	13	284	11.4
10,000	11	286	22.6	17	288	19.5													12	263	28.8													12	293	15.0	11	284	17.0
12,000				13	296	18.1																												10	285	17.9			
14,000				12	284	17.8																																	

Altitude (meters) m. s. l.	Ely, Nev. (1,910 m.)			Grand Junction, Colo. (1,413 m.)			Greensboro, N. C. (271 m.)			Havre, Mont. (767 m.)			Jacksonville, Fla. (16 m.)			Joliet, Ill. (178 m.)			Las Vegas, Nev. (573 m.)			Little Rock, Ark. (88 m.)			Medford, Oreg. (410 m.)			Miami, Fla. (15 m.)			Mobile, Ala. (66 m.)			Nashville, Tenn. (194 m.)			New York, N. Y. (15 m.)		
	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity
Surface	26	168	0.6	28	323	0.9	26	263	4.0	27	260	2.0	28	339	0.5	27	268	3.5	28	27	0.8	28	255	2.6	28	13	0.3	28	112	1.2	27	250	2.2	27	271	3.2	25	263	4.7
500							26	257	5.4				28	259	2.6	27	262	5.3				28	244	4.3	28	8	0.2	28	67	1.7	27	244	2.9	27	252	4.7	25	265	6.6
1,000							26	250	7.1	27	268	6.6	27	266	5.1	25	272	8.7	28	30	0.6	26	257	6.3	28	199	1.2	27	351	0.8	25	266	3.8	26	254	6.2	24	284	8.6
1,500				28	311	1.3	26	262	9.6	27	283	10.0	28	275	6.6	22	283	10.5	28	292	0.7	25	264	8.8	28	200	3.4	25	305	2.5	24	294	6.1	22	275	8.3	20	293	13.3
2,000	26	184	0.6	28	292	1.4	25	283	12.9	26	296	10.4	25	272	7.3	18	288	13.2	28	241	0.9	25	273	11.8	27	216	4.1	23	281	3.8	22	296	9.7	20	279	11.2	15	288	13.5
2,500	26	229	2.6	27	226	2.7	23	284	15.0	24	295	10.8	23	265	10.5	18	294	15.2	28	264	1.6	24	281	14.3	24	224	4.7	22	275	5.1	20	302	13.4	19	288	13.9	10	278	14.0
3,000	26	300	2.3	26	243	4.8	20	289	18.4	21	295	11.4	21	273	13.2	16	294	19.1	25	286	3.2	21	282	16.8	24	221	5.4	20	278	7.4	15	293	16.1	18	292	15.9			
4,000	22	284	5.0	23	287	6.8	19	290	20.2	16	294	13.4	13	292	14.0	10	305	20.1	25	300	4.4	19	277	19.4	21	220	5.2	15	290	10.1	11	293	17.4	16	298	20.0			
5,000	17	283	7.2	15	282	7.7	17	293	22.8	11	292	13.0	10	285	15.9				25	285	7.0	17	278	23.4	18	212	4.1	13	287	13.4				14	294	20.8			
6,000	17	275	8.2	12	283	7.8	16	293	25.9										24	287	10.4	10	285	18.9	16	208	2.2	12	284	16.2				12	297	22.9			
8,000	15	274	9.6	10	301	10.7	11	301	26.1										20	285	14.5				11	73	6.1							10	302	23.4			
10,000	14	269	10.0																18	268	20.0				10	261	3.5							10	299	27.4			
12,000	10	301	13.9																16	274	20.1																		
14,000																			13	259	12.2																		

Altitude (meters) m. s. l.	Oakland, Calif. (8 m.)			Oklahoma City, Okla. (402 m.)			Omaha, Nebr. (306 m.)			Phoenix, Ariz. (388 m.)			Rapid City S. Dak. (982 m.)			St. Louis, Mo. (181 m.)			St. Paul, Minn. (225 m.)			San Antonio, Tex. (240 m.)			San Diego, Calif. (15 m.)			Sault Ste. Marie, Mich. (230 m.)			Seattle, Wash. (12 m.)			Spokane, Wash. (603 m.)			Washington D. C. (24 m.)		
	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity
Surface	27	266	2.4	27	296	2.2	27	271	3.0	28	130	0.3	27	337	6.9	28	253	3.1	28	281	3.5	28	191	0.9	27	264	2.6	21	290	3.4	25	256	1.7	23	221	0.5	27	263	3.1
500	27	98	0.1	27	280	2.4	27	274	3.7	28	35	0.4				28	256	4.0	28	227	4.6	28	199	1.3	27	254	1.6	21	278	3.8	25	201	3.0				27	275	6.4
1,000	26	174	1.7	27	262	3.2	27	282	5.8	28	95	0.2	27	336	7.0	26	253	5.9	25	292	7.2	26	247	1.6	24	140	1.7	16	300	5.6	21	207	4.8	23	222	1.6	25	275	8.5
1,500	25	192	3.1	27	283	6.5	27	302	8.2	28	131	0.8	27	321	9.0	25	269	8.7	21	295	9.0	24	262	4.0	23	136	1.1	15	299	6.4	18	210	3.4	20	229	3.3	24	278	9.9
2,000	22	188	2.6	27	291	9.4	24	305	11.9	27	182	1.2	25	310	10.9	24	277	10.3	20	303	11.6	23	258	6.4	20	123	1.9	11	296	11.6	18	212	3.0	16	239	2.1	22	284	11.8
2,500	22	221	3.1	27	294	10.7	23	306	13.4	25	168	0.5	22	310	12.4	24	279	12.6	19	300	14.1	22	270	8.2	20	80	0.4				18	225	3.7	14	270	3.5	20	283	15.6
3,000	21	222	3.5	26	285	12.7	20	299	14.4	25	259	2.0	21	313	13.6	23	282	14.2	18	302	15.4	20	272	10.9	20	291	2.2				16	232	3.2	14	287	4.4	18	284	17.6
4,000	19	219	5.3	26	271	13.1	19	303	15.2	24	268	5.4	17	322	15.8	22	279	17.1	16	313	18.7	19	275	13.9	17	245	3.5				13	353	1.6	14	297	9.0	14	281	20.4
5,000	19	224	6.1	26	281	18.2	19	294	18.0	18	265	6.4	16	323	19.8	19	278	20.0	13	318	24.4	18	272	15.8	15	251	5.6												
6,000	16	298	8.8	24	281	21.1	16	310	20.8	15	281	6.3	14	319	20.6	17	283	21.5	11	306	26.2	15	273	18.2	11	262	7.5												
8,000	13	273	10.1	16	294	22.2				15	281	9.4	10	314	20.0	10	310	20.3				12	277	23.6														
10,000				11	295	31.4				13	281	14.1																												
12,000																																							
14,000																																							

TABLE 3.—*Maximum free-air wind velocities (m. p. s.), for different sections of the United States based on pilot-balloon observations during February 1943*

Section	Surface to 2,500 meters (m. s. l.)					Between 2,500 and 5,000 meters (m. s. l.)					Above 5,000 meters (m. s. l.)				
	Maximum velocity	Direction	Altitude (m) m. s. l.	Date	Station	Maximum velocity	Direction	Altitude (m) m. s. l.	Date	Station	Maximum velocity	Direction	Altitude (m) m. s. l.	Date	Station
Northeast [1]	58.2	w.	640	11	Nantucket, Mass.	54.4	nw.	3,910	8	Phillipsburg, Pa.	74.2	nw.	9,330	10	Caribou, Me.
East-Central [2]	44.0	ssw.	2,130	10	Richmond, Va.	50.0	w.	3,450	14	Raleigh, N. C.	65.2	w.	7,430	25	Nashville, Tenn.
	44.0	wnw.	2,500	1	Washington, D. C.										
Southeast [3]	41.3	nw.	1,050	14	Spartanburg, S. C.	58.0	w.	4,960	14	Charleston, S. C.	66.0	w.	11,900	7	Miami, Fla.
North-central [4]	41.2	nnw.	2,470	12	Williston, N. Dak.	52.6	nnw.	5,000	13	St. Paul, Minn.	60.0	n.	7,600	17	S. Ste. Marie, Mich.
Central [5]	41.6	wsw.	1,420	27	Fort Wayne Ind.	46.4	nw.	4,590	26	St. Louis, Mo.	61.6	w.	8,880	24	Wichita, Kan.
South-Central [6]	42.6	wnw.	2,290	8	Oklahoma City, Okla.	55.3	nw.	5,000	6	Waco, Tex.	80.0	wsw.	12,280	3	Abilene, Tex.
Northwest [7]	45.5	wsw.	2,380	6	Billings, Mont.	46.8	wnw.	4,830	11	Spokane, Wash.	62.0	nnw.	7,690	5	Great Falls, Mont.
West-Central [8]	33.6	wnw.	2,290	11	Cheyenne, Wyo.	52.0	nnw.	5,000	9	Reno, Nev.	74.8	n.	11,050	3	Reno, Nev.
Southwest [9]	44.0	wsw.	2,460	9	Roswell, N. Mex.	58.8	sse.	4,170	20	Sandberg, Calif.	69.6	wsw.	11,200	2	Tucson, Ariz.

[1] Maine, Vermont, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, and northern Ohio.
[2] Delaware, Maryland, Virginia, West Virginia, southern Ohio, Kentucky, eastern Tennessee, and North Carolina.
[3] South Carolina, Georgia, Florida, and Alabama.
[4] Michigan, Wisconsin, Minnesota, North Dakota, and South Dakota.
[5] Indiana, Illinois, Iowa, Nebraska, Kansas, and Missouri.
[6] Mississippi, Arkansas, Louisiana, Oklahoma, Texas (except El Paso), and western Tennessee.
[7] Montana, Idaho, Washington, and Oregon.
[8] Wyoming, Colorado, Utah, northern Nevada and northern California.
[9] Southern California, southern Nevada, Arizona, New Mexico, and extreme west Texas.

RIVER STAGES AND FLOODS

By C. R. JORDAN

Precipitation during February 1943 was below normal in most sections of the United States. Moderate rains occurred over the interior of the Southeast during the first week of February. There was also moderately heavy precipitation over the northern Pacific coastal area during the early part of the month.

Temperatures during February averaged well above normal over the entire country with the exception of the Florida Peninsula and a small area in southeastern Arizona. The greatest departure from normal was in the northern Great Plains States where the temperature for the month averaged from 8° to 10° above normal. Despite the high average temperatures for the month, the coldest weather of the winter was experienced in the Northeastern States during the middle of the month and a hard freeze was felt as far south as the Gulf coast. Minimum temperatures of 30° or more below zero were reported in New England with temperatures as low as 10° below freezing extending into northern Florida.

Most of the flooding during February resulted from melting snow or ice jams that occurred in several streams when the unseasonably warm weather of early February and again during the latter part of the month caused the ice in many streams to move out early. Fortunately, precipitation during these periods was light. Moderate rains over the Southeast during the first half of February produced some light flooding in that section, but little damage was reported. Moderate floods also occurred in the Columbia River Basin.

St. Lawrence drainage.—The snow cover in the Upper Lakes region was reduced somewhat by the warm weather during the latter part of February. Snow depths at the end of the month ranged from a trace in southern Michigan to 3 feet or more in northern Michigan and Wisconsin. Water content of the snow cover in the portion of the Adirondack Mountain region of New York tributary to the St. Lawrence River averaged about 8 inches.

The Flint River at Columbiaville, Mich., swollen by water from melting snow, rose slightly above flood stage on February 25, when an ice jam formed below the town but no damage resulted.

Atlantic slope drainage.—The snow cover in New England was reduced considerably by the warm weather of February 19–25, but a heavy cover was still present at the end of the month in Vermont and New Hampshire and in the mountains of New York. Maximum depths of more than 3 feet in Maine and 4 feet in some sections of New York were reported. Only a few stations in the mountains of Pennsylvania reported over 6 inches of snow. Ice in the rivers ranged from 10 inches at Hartford, Conn., to about 3 feet in northern Maine. No ice was reported in the rivers of eastern Pennsylvania and New York at the close of the month with the exception of shore ice in the Hudson River at Albany, N. Y.

The Connecticut River was slightly above flood stage at White River Junction, Vt., on February 25, as a result of ice released in the White River overrunning the ice in the Connecticut River at their confluence.

An ice jam formed in the Mohawk River just below Tribes Hill, N. Y., on the morning of February 24. The river rose rapidly to a stage of 24.8 feet (1.8 feet above flood stage) at noon, at which time the gorge broke and the water receded rapidly. There was also light flooding in the vicinity of Schenectady, N. Y., from an ice jam that formed below that point. Damage was negligible.

The unusually warm weather from February 19–24, with temperatures as high as 63° at Binghamton, N. Y., produced relatively heavy run-off from snow melt in the headwaters of the Susquehanna River in New York. The flow was not augmented by precipitation of consequence and the run-off from melting snow was not sufficient to produce serious flooding. Flood stages were exceeded slightly at Sherburne, Greene, and Binghamton, N. Y., on the Chenango River and at Oneonta, Bainbridge, and Vestal, N. Y., on the Susquehanna. Some basements were flooded in low places in the area of Vestal and Westover, N. Y., but otherwise little damage resulted.

Moderate rains during the first week of February, averaging from 0.5 inch to 2.5 inches in the southeastern section, produced light to moderate flooding in most streams along the Atlantic coast from Virginia southward.

The Roanoke River rose to 7 feet above flood stage at Weldon, N. C., on the 9th and nearly 2 feet above flood stage at Williamston, N. C., on the 13th. Damage was confined mostly to prospective crops and to the interruption of business.